ELECTRONICS

6CW5

POWER-AMPLIFIER PENTODE

DESCRIPTION AND RATING

FOR AF POWER AMPLIFIER APPLICATIONS

The 6CW5 is a power-amplifier pentode designed for use in the audio-frequency power-output stage of television and radio receivers and in high-fidelity amplifiers.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential

Heater Voltage, AC or DC	6.3	Volts
Heater Current	0.76	Amperes
Direct Interelectrode Capacitances*		
Grid Number 1 to Plate	0.6	pf
Grid Number 1 to All	12	pf
Plate to All	6.0	pf

MECHANICAL

Mounting Position—Any
Envelope—T-6½, Glass
Base—E9-1, Small Button 9-Pin
Outline Drawing—EIA 6-4

Maximum Diameter	7/8	Inches
Maximum Over-all Length	3 1/16	Inches
Maximum Seated Height	2 13/16	Inches

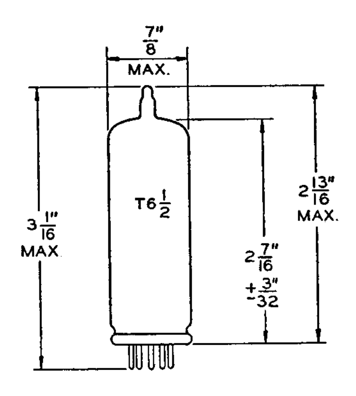
MAXIMUM RATINGS

DESIGN-CENTER VALUES

Plate Voltage	250	Volts
Screen Voltage	200	Volts
Plate Dissipation	12	Watts
Screen Dissipation	1.75	Watts
Peak Screen Dissipation	6.0	Watts
DC Cathode Current	100	Milliamperes

Heater-Cathode Voltage		
Heater Positive with Respect to Cathode	100	Volts
Heater Negative with Respect to Cathode		
DC Component	150	Volts
Total DC and Peak	300	Volts
Grid-Number 1 Circuit Resistance		
With Cathode Bias	1.0	Megohms

PHYSICAL DIMENSIONS

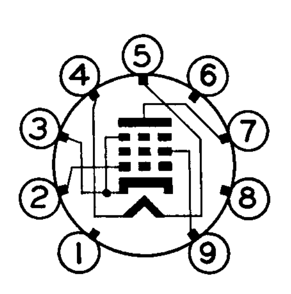


EIA 6-4

TERMINAL CONNECTIONS

Pin 1—Internal Connection
Pin 2—Grid Number 1
Pin 3—Cathode and Grid Number 3 (Suppressor)
Pin 4—Heater
Pin 5—Heater
Pin 6—Internal Connection
Pin 7—Plate
Pin 8—Internal Connection
Pin 9—Grid Number 2 (Screen)

BASING DIAGRAMS



EIA 9CV

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

Plate Voltage	170	Volts
Screen Voltage	170	Volts
Grid-Number 1 Voltage	−12.5	Volts
Plate Resistance, approximate	23000	Ohms
Transconductance	10000	Micromhos
Plate Current	70	Milliamperes
Screen Current	5.0	Milliamperes

CLASS A_1 AMPLIFIER

Plate Voltage	170	Volts
Screen Voltage	170	Volts
Grid-Number 1 Voltage	−12.5	Volts
Peak AF Grid-Number 1 Voltage	9.9	Volts
Zero-Signal Plate Current	70	Milliamperes
Maximum-Signal Plate Current	70	Milliamperes
Zero-Signal Screen Current	5.0	Milliamperes
Maximum-Signal Screen Current	22	Milliamperes
Load Resistance	2400	Ohms
Total Harmonic Distortion, approximate	10	Percent
Maximum-Signal Power Output	5.6	Watts

PUSH-PULL CLASS AB_1 AMPLIFIER, VALUES FOR TWO TUBES

Plate Voltage	250	Volts
Screen Voltage	200	Volts
Grid-Number 1 Voltage	−18.5	Volts
Peak AF Grid-to-Grid Voltage	34	Volts
Zero-Signal Plate Current	91	Milliamperes
Maximum-Signal Plate Current	180	Milliamperes
Zero-Signal Screen Current	4.0	Milliamperes
Maximum-Signal Screen Current	23	Milliamperes
Effective Load Resistance, Plate-to-Plate	3000	Ohms
Total Harmonic Distortion	1.0	Percent
Maximum-Signal Power Output	25	Watts

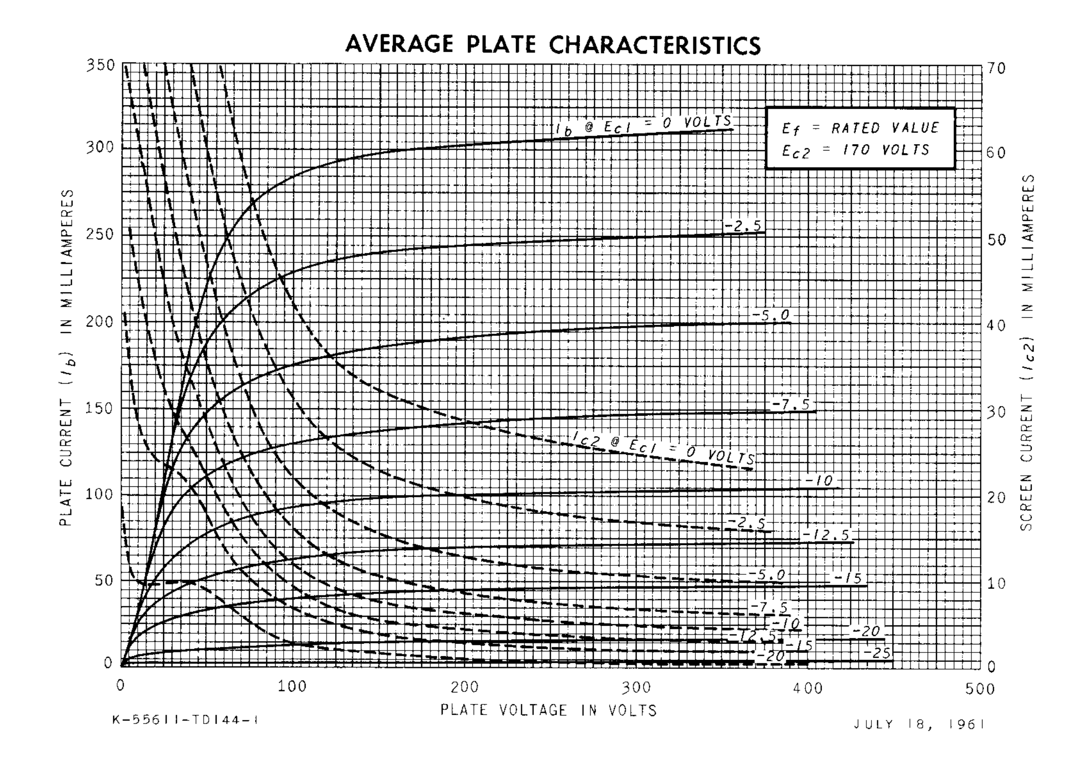
*Without external shield.

Design-Center ratings are limiting values of operating and environmental conditions applicable to a bogey electron tube of a specified type as defined by its published data and should not be exceeded under normal conditions.

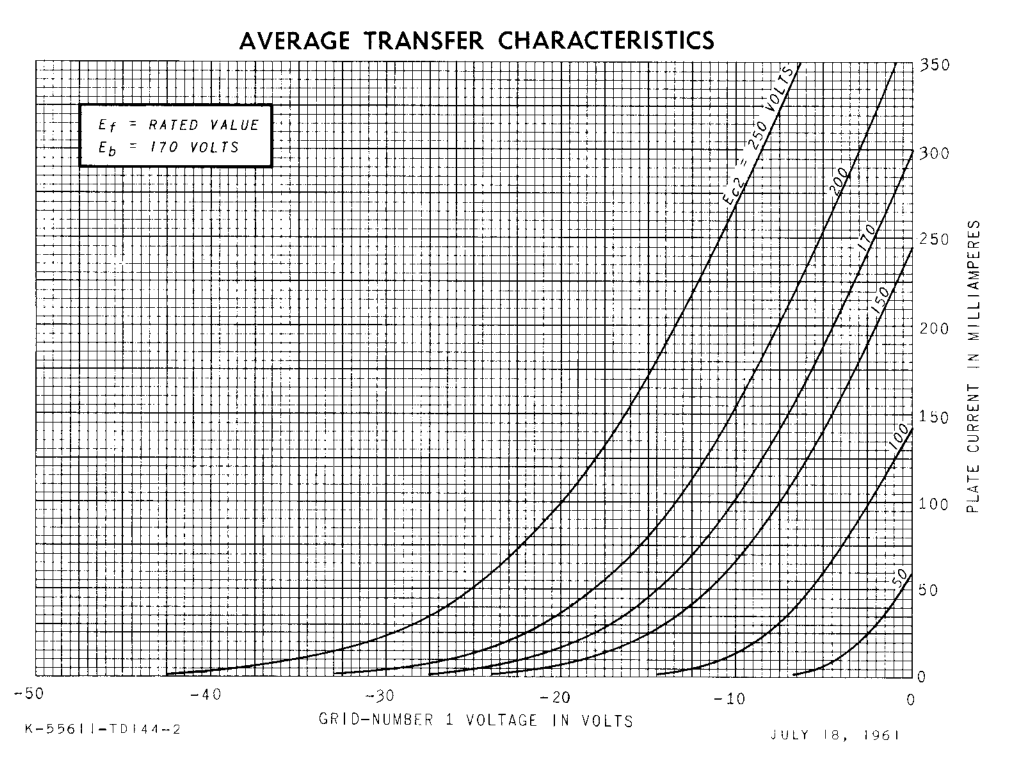
The tube manufacturer chooses these values to provide acceptable serviceability of the tube in average applications, making allowance for normal changes in operating conditions due to rated supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in the characteristics of the tube under consideration and of all other electron devices in the equipment.

The equipment manufacturer should design so that initially no design-center value for the intended service is exceeded with a bogey tube under normal operating conditions at the stated normal supply voltage.

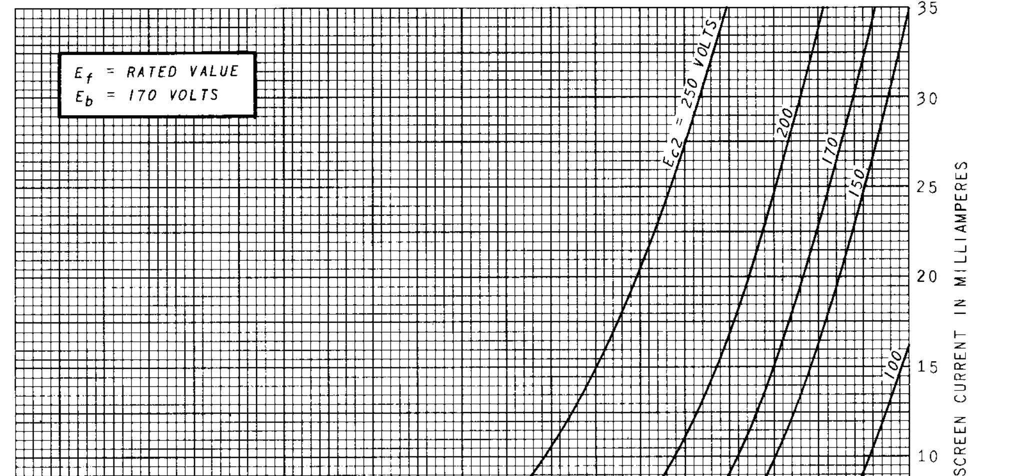
AVERAGE PLATE CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



OPERATION CHARACTERISTICS

